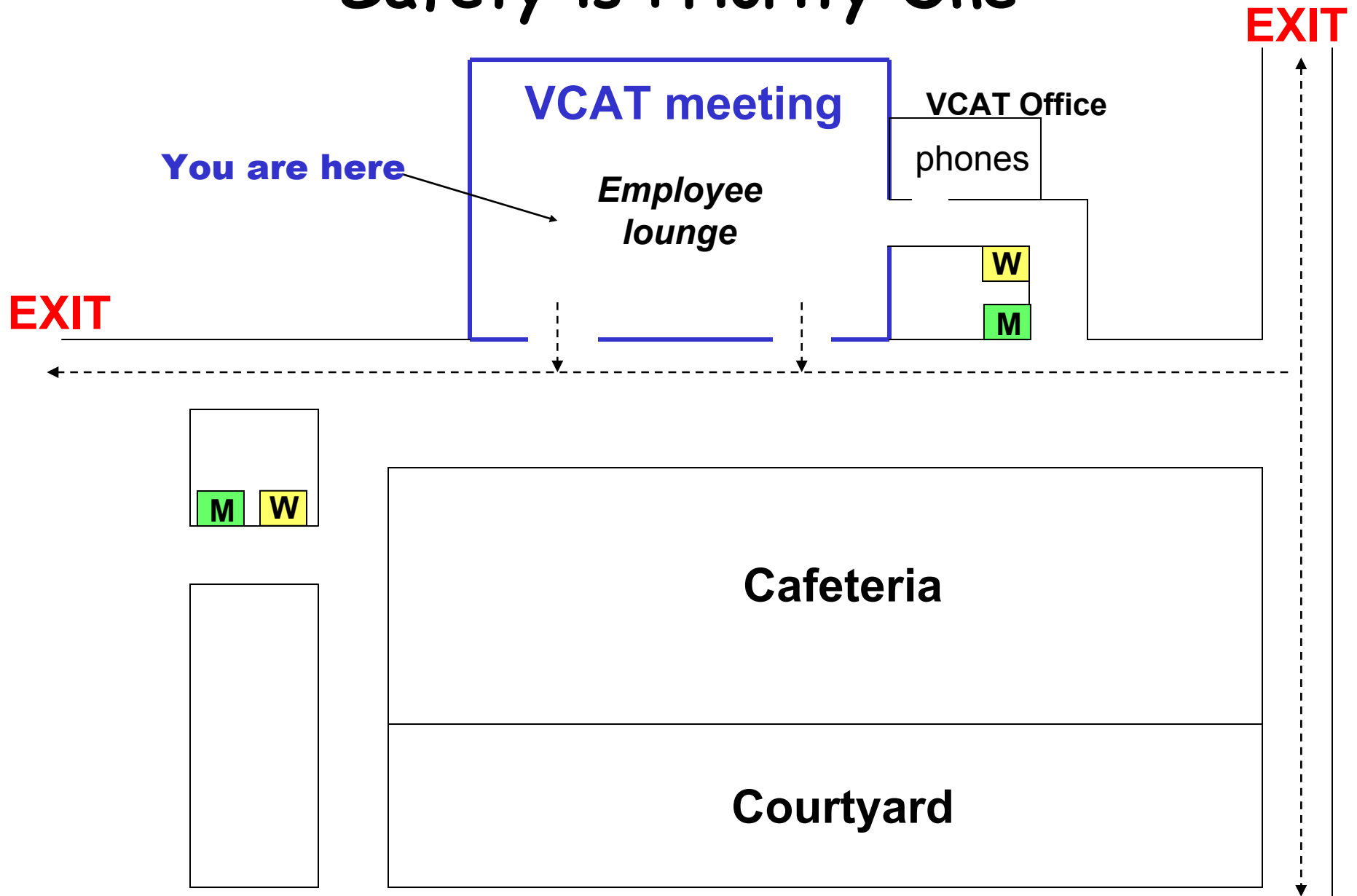


# Safety is Priority One



# NIST Update

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**Hratch G. Semerjian**  
Acting Director, NIST

Visiting Committee on Advanced Technology

March 15, 2005

# Welcome New VCAT Members

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- **Dr. John Cassidy, Jr.**  
Senior Vice President, Science and Technology  
United Technologies Corporation



- **Dr. E. David Spong**  
Chairman, ChangeAgent, Inc.  
Retired President, Boeing Aerospace Support

# Welcome New VCAT Members

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- **Mr. W. Wyatt Starnes**  
Chairman/CEO SignaCert, Inc.  
Co-founder/Director RAINS



# Outline of Agenda

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- New Members, Staff Recognition
- Technical and Programmatic Accomplishments
- Budget Status
- Strategic Planning
  - U.S. Measurement System
  - Congressional Oversight Committees Update
- Outreach
- Partnerships
- Performance Management
- Safety

# Recent Administration Change

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## Carlos Gutierrez, New Secretary of Commerce

### Kellogg Company

- Chairman, 2000-04
- Chief executive, 1999-2004
- President, 1998-2000
- Chief operating officer, 1998-99
- Other positions, 1975-98
- Began with Kellogg selling cereal out of a van in Mexico City
- Emigrated from Cuba, 1960

Confirmed January 24, 2005

Sworn in February 7, 2005

Visited NIST on March 7, 2005



- Hidden slide for extra notes.



# Staff Recognition

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## IEEE Haraden Pratt Award

Daniel Benigni – Telecommunications and CIO  
Support Division



## Fellow of the IEEE

Pavel Kabos – Electromagnetics Division (EEEL)  
Perry Wilson – Electromagnetics Division (EEEL)



## Antenna Measurement Techniques Association Distinguished Service Award

Michael Francis – Electromagnetics Division (EEEL)





# Staff Recognition

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## ANSI Next Generation Award

Mary Jo DiBernardo – Technology Services

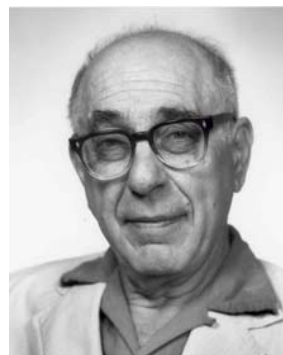


## ANSI Meritorious Service Award

Louis Costrell – Ionizing Radiation Div. (PL)

Ileana Martinez – Technology Services

Mary Saunders – Technology Services



## Fellow of the American Physical Society

Alamgir Karim – Polymers Division (MSEL)



# Facilities Recognition

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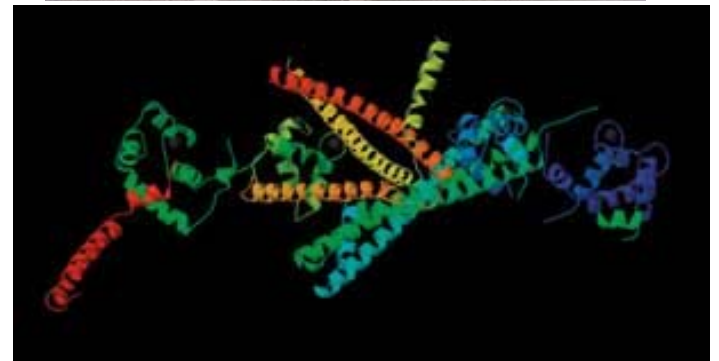


The **Advanced Measurement Laboratory** was awarded the distinction of “High Honors” in the 2005 R&D Magazine Lab of the Year competition – the highest award given in the New Construction category.

# Technical Accomplishments

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- Integrated Sphere for Service Life Determination
- Troponin I – a New SRM to Improve Diagnosis of Heart Attacks

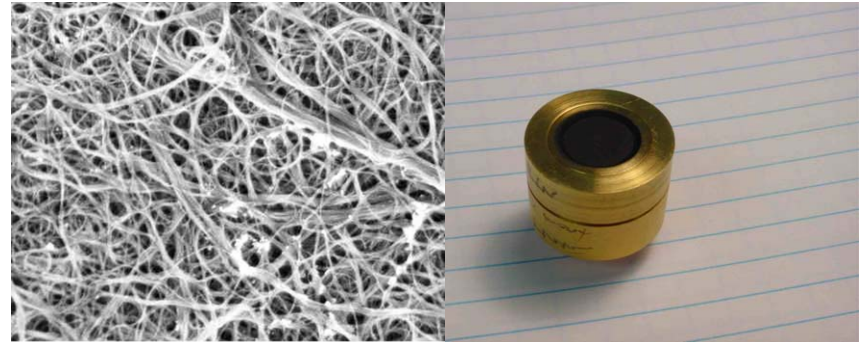




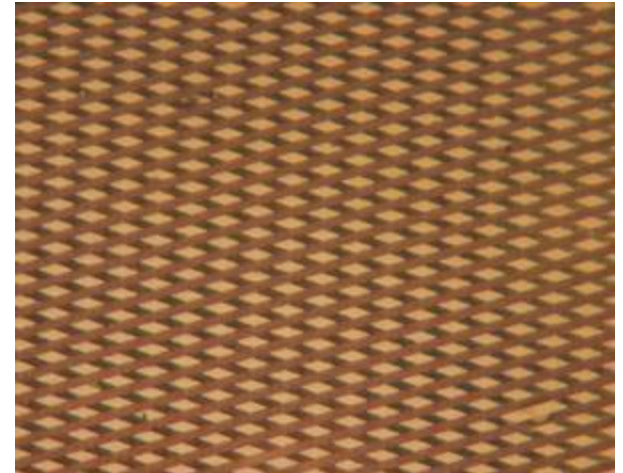
# Technical Accomplishments

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- Carbon Nanotubes for Improved Optical Power Detection



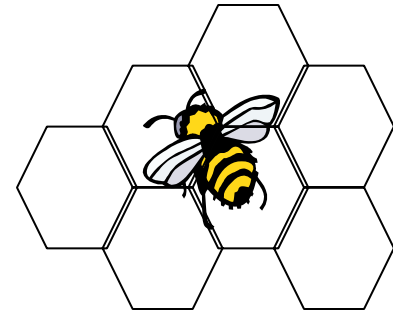
- New Patent on Molecular Electronics Process



# Technical Accomplishments

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- BEES adopted by USDA  
A Life-Cycle Environmental and Economic  
Performance Measurement Tool



- NIST Special Publication  
800-58 VOIP Security



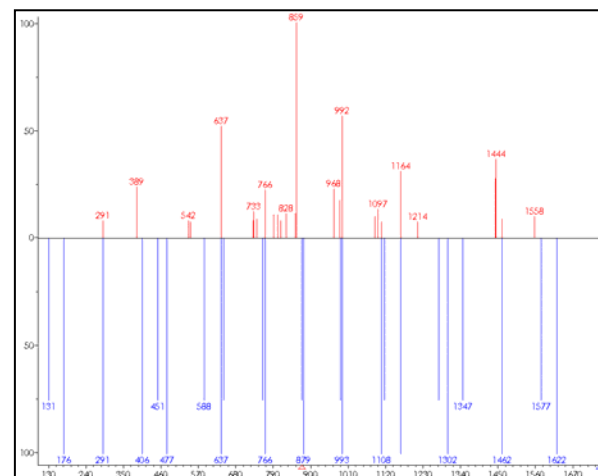
# Technical Accomplishments

## Library of Peptide Reference Spectra

Protein Identification from peptide mass spectra is widely used, but error prone

Actual

Sequence/  
Spectrum Search



Build spectrum library for reliable identification by full spectrum matching

plasma	BWL	DXJ	GSA	PEX	URN	VUX
BWL	254	87	57	48	76	44
DXJ	87	3789	175	139	339	210
GSA	57	175	585	65	110	83
PEX	48	139	65	621	89	62
URN	76	339	110	89	1392	111
VUX	44	210	83	62	111	1036

# Program Accomplishments

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- Help America Vote Act



- WTC Collapse Investigation



- Rhode Island Station Fire Investigation



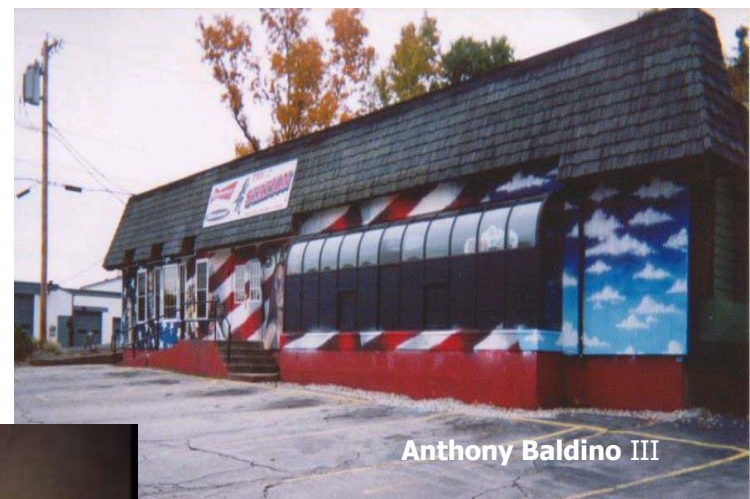


# Program Accomplishments

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## ➤ Rhode Island Nightclub Fire Investigation

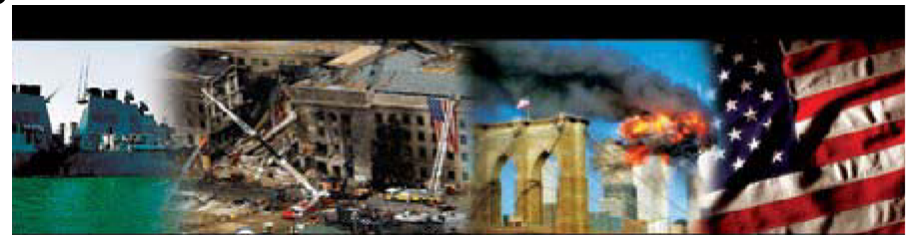
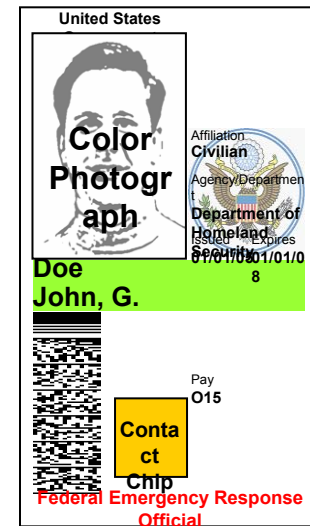
- Report released March 3, 2005
- Twelve specific recommendations were made to improve fire safety and emergency preparedness in similar facilities.



# Program Accomplishments

## Homeland Security Standards

- HSPD -7 Critical Infrastructure Identification, Prioritization and Protection
- HSPD -11 Comprehensive Terrorist Related Screening Procedures (RFID technology development and biometric passports)
- HSPD -12 Personal Identity Verification of Federal Employees and Contractors



- Hidden slide for more notes

# NIST FY 2006 Budget Request (\$M)

## Appropriation:

### Scientific & Technical Research & Services (STRS):

	FY 2004 Enacted	FY 2005 Enacted	FY 2006 Request
NIST Laboratories	335.1*	373.4 *	420.6
Baldrige National Quality Program	5.6	5.4	5.7
<b>Subtotal, STRS</b>	<b>340.7</b>	<b>378.8</b>	<b>426.3</b>

### Industrial Technology Services (ITS):

Advanced Technology Program	177.3	140.4	0.0
Hollings Manufacturing Ext. Partnership	39.2	107.5	46.8
<b>Subtotal, ITS</b>	<b>216.5</b>	<b>247.9</b>	<b>46.8</b>

### Construction of Research Facilities (CRF):

Construction and Major Renovations	20.9	6.9	23.9
Modifications and Improvements	22.6	22.7	35.0
Directed Grants	20.8	42.9	0.0
<b>Subtotal, CRF</b>	<b>64.3</b>	<b>72.5</b>	<b>58.9</b>

## Total

	621.5	699.2	532.0
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*FY 2004 and FY 2005 amounts do not reflect rescissions of unobligated balances.*

*\*Congressionally-directed STRS grants included: \$13.8M STRS in 2004; \$8.8M in 2005.*

# FY 2006 STRS Initiatives (\$K)

<b>Advances in Manufacturing</b>	<b>[19,600]</b>
<i>National Nanomanufacturing and Nanometrology Facility</i>	10,000
<i>Nanomanufacturing Research</i>	4,000
<i>Measurements and Standards for International Trade</i>	4,000
<i>Manufacturing Enterprise Integration</i>	1,600
<b>Measurements and Standards for Homeland Security</b>	<b>[3,000]</b>
<i>Standards, Technology, and Practices for Buildings &amp; First Responders</i>	2,000
<i>Standards for Biometric Identification</i>	1,000
<b>New Measurement Horizons for the U.S. Economy and Science</b>	<b>[17,195]</b>
<i>Building Competence for Advanced Measurements Program</i>	4,000
<i>Biosystems and Health</i>	7,195
<i>Interoperability and Security for Complex Scientific Systems</i>	2,000
<i>Quantum Computing</i>	4,000
<b>STRS Initiative Total</b>	<b>\$39,795</b>

# U.S. Measurement System Update

## *USMS Vision*

- NIST ensures that the U.S. measurement system is healthy and capable of serving U.S. institutions and citizens in the 21<sup>st</sup> century
- NIST will hold itself *accountable* for
  - *Assessing* the state of the USMS on a regular basis
  - *Coordinating* with others to meet the highest-priority needs
  - *Advising* the Administration and Congress on
    - What needs to be done, by NIST *and others*, to meet the needs of the country
    - The *consequences*, in economic terms, of not meeting those needs

# USMS Action Plan Update

Begin internal and external engagement	February 2005
Public launch	March 2005
Collect and analyze customer and stakeholder information	Now through September 2005 and ongoing
Finalize agenda for USMS summit	November 2005
Convene USMS summit	January 2006
Release interim report on USMS summit	February/March 2006
Conduct post-summit workshops	Through May 2006
Publish “U.S. Measurement Needs and Opportunities Assessment”	July 2006
Coordinate actions to address critical needs	October 2006
Report to the Administration and Congress	December 2006
Repeat process	Every 4 years



- Hidden slide. More notes from previous slide

# Outreach Activities

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- House Appropriations Staff (1/24/05 at NIST)
- House Manufacturing Task Force Chairman Representative Manzullo (1/25/05 at NIST)
- Senate Homeland Security and Government Affairs Committee Staff (2/1/05)
- Senate Commerce Committee Staff (2/4/05 at NIST)
- Senate Committee on Commerce, Science, and Transportation (2/4/05)
- House Science Committee Staff (2/11/05)
- Representative Udall's staff (2/11/05)

# Outreach Activities

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- Representative Van Hollen's staff (2/11/05)
- Senator Sarbanes' staff (2/11/05)
- Senate Commerce Committee Staff (2/14)
- Maryland Governor's Business Breakfast (2/18/05)
- Representative Kennedy visit to NIST (2/23/05)
- House Appropriations Committee briefing (2/25/05)
- Senator Mikulski's staff (2/28/05)
- Representative Inglis' staff (2/28/05)

# Update on Congressional Authorization Committee Changes

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- House Committee on Science
  - No changes
- Subcommittee on Environment, Technology, & Standards
  - David Wu (D-OR) replaces Mark Udall (D-CO) as RMM
- Senate Committee on Commerce, Science, & Transportation
  - Ted Stevens (R-AK) replaces John McCain (R-AZ) as chair
  - Daniel Inouye (D-HI) replaces Ernest Hollings (D-SC) as RMM
- New Senate Subcommittee Structure

# Update on Congressional Appropriation Committee Changes

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- House Committee on Appropriations
  - Jerry Lewis (R-CA) replaces C. W. Young (R-FL) as chair
- Subcommittee on Science, State, Justice, and Commerce
  - Alan Mollohan (D-WV) replaces Jose Serrano (D-NY) as RMM
- Senate Committee on Appropriations (new subcommittee structure)
  - Thad Cochran (R-MS) replaces Ted Stevens (R-AK) as chair
- Subcommittee on Commerce, Justice, and Science
  - Richard Shelby (R-AL) replaces Judd Gregg (R-NH) as chair
  - Barbara Mikulski (D-MD) replaces Ernest Hollings (D-SC) as RMM
- The House and Senate have both changed subcommittee structure but not in the same way

# Extended Outreach Efforts

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- Aerospace/ aeronautics
  - Automotive
  - Building Construction & Fire safety
  - Chemical & Allied Products
  - Computer Equipment & Software
  - Energy
  - Electronics
  - Food & Nutrition
  - Health and Medical Products & Services
  - Industrial and Analytical Instruments
  - Information System and Services
  - Machinery & Equipment
  - Materials
  - Pharmaceuticals
- 
- Cross cutting technology areas are being handled through Strategic Working Groups (nano, bio & health, HS, IKM)

# Strategic Partnerships: Update

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- HHS
- Agilent Technologies
- Pfizer
- USCAR
- RPI
- Utah State



# Performance Management: Balanced Scorecard

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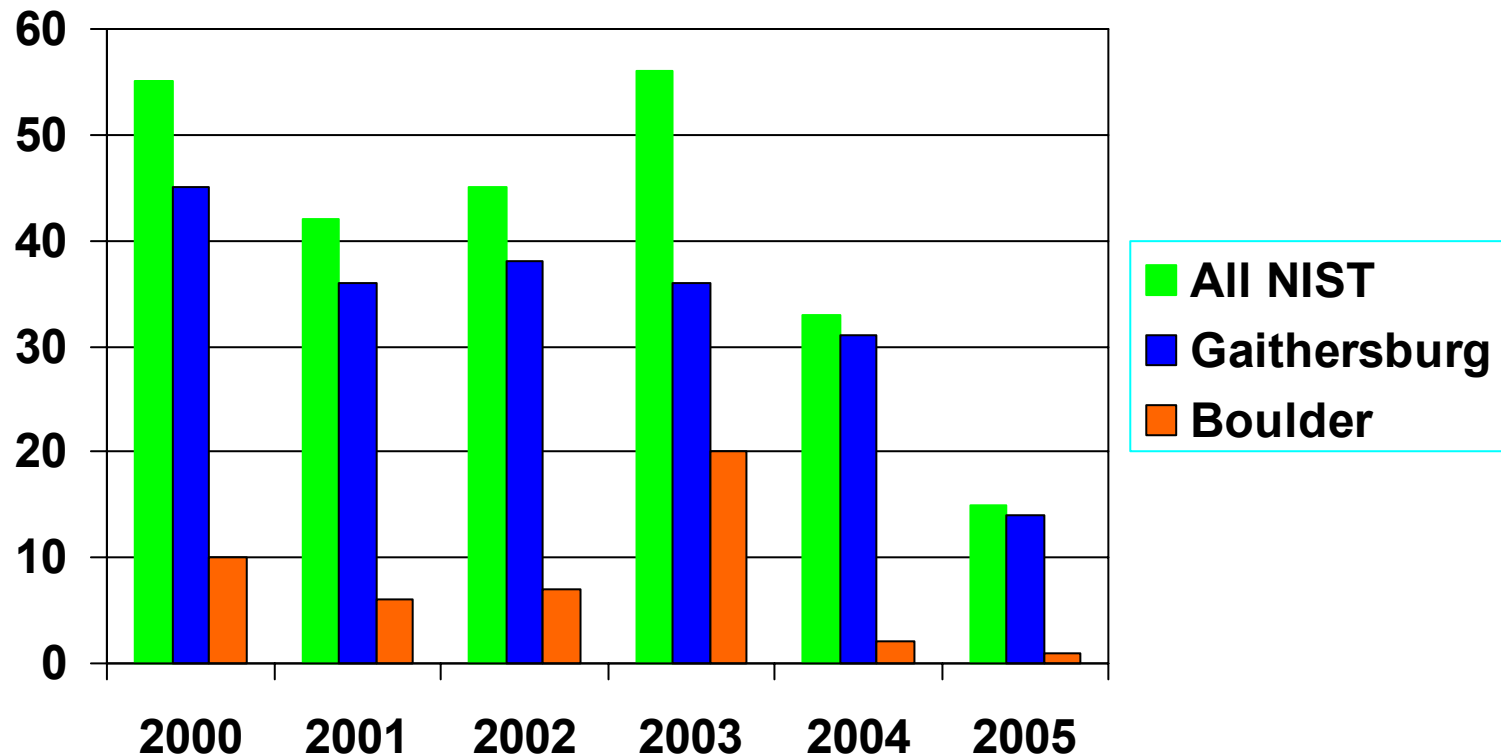
- New Structure for FY05
  - Programs – Maximize impact and demonstrate programmatic results
  - People – Continuous improvement in developing and managing a high-performance workforce
  - Resources – Maximize operational, organizational, and programmatic leverage and impact
  - Customers – Anticipate and exceed customer needs and expectations
- SES performance plans

# NIST Safety

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- Safety Council/Safety operations committee
- High marks for safety in employee survey
  - Draft PPE policy developed
  - New office safety manual created
  - New safety training module for new employees
  - Safety section of Administrative Manual revised
- Plant Division receiving Blood-borne pathogen awareness training
- NIST Safety Days - June 1 in Boulder, June 2 in Gaithersburg

# All Recordable Incidents FY 2000 Through FY 2005 to Date February



# Thanks to our VCAT Partners

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*For providing valuable  
insight to guide  
positive change  
at NIST*



# **Lost Work Day Incident Frequency per 100 Employees, FY 2003 – FY 2005\***

<b>Location</b>	<b>FY 2003 LWIFR</b>	<b>FY 2004 LWIFR</b>	<b>FY 2005 LWIFR*</b>
<b>All NIST</b>	<b>1.12</b>	<b>0.41</b>	<b>0.31</b>
<b>NIST G'burg</b>	<b>0.82</b>	<b>0.40</b>	<b>0.32</b>
<b>NIST Boulder</b>	<b>3.44</b>	<b>0.55</b>	<b>0.27</b>
<b>All Labs</b>	<b>0.55</b>	<b>0.27</b>	<b>0.13</b>
<b>Labs G'burg</b>	<b>0.46</b>	<b>0.32</b>	<b>0.16</b>
<b>Labs Boulder</b>	<b>1.04</b>	<b>0</b>	<b>0</b>
<b>Plant G'burg</b>	<b>4.22</b>	<b>0.60</b>	<b>0.90</b>
<b>EMSS Boulder</b>	<b>15.15</b>	<b>2.37</b>	<b>0</b>

**\* 2005 To date (February)**

# **Lost Work Day Incident Severity per 100 Employees, FY 2003 – 2005\***

<b>Location</b>	<b>2003 LWISR</b>	<b>2004 LWISR</b>	<b>2005 LWISR*</b>
<b>All NIST</b>	<b>21.46</b>	<b>8.84</b>	<b>3.35</b>
<b>NIST G'burg</b>	<b>15.48</b>	<b>9.93</b>	<b>3.80</b>
<b>NIST Boulder</b>	<b>67.87</b>	<b>1.63</b>	<b>0.27</b>
<b>All Labs</b>	<b>13.87</b>	<b>2.65</b>	<b>0.81</b>
<b>Labs G'burg</b>	<b>9.27</b>	<b>3.17</b>	<b>0.97</b>
<b>Labs Boulder</b>	<b>44.86</b>	<b>0</b>	<b>0</b>
<b>Plant G'burg</b>	<b>115.33</b>	<b>28.85</b>	<b>11.72</b>
<b>EMSS Boulder</b>	<b>116.30</b>	<b>5.93</b>	<b>0</b>

**\*2005 To date (February)**

# All Recordable Incidents by OU FY 2000 Through FY 2005 to Date February

